

REMARKS

Claims 1-29 were examined. Claims 1-9, 11-15, 17-20, 22-25 and 27-29 were rejected, while claims 10, 16, 21 and 26 were objected to as depending from a rejected claim. In response to the above-identified Office Action, Applicants amend claims 8, 14, 22 and 24. Reconsideration of the rejected claims in light of the amendments and the following remarks is requested.

I. Claims Rejected Under 35 U.S.C. § 103(a)

The Examiner rejected claims 1-4, 6-9, 12, 14, 15, 19, 24, 25 and 28 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,615,299 issued to Herzi (“*Herzi*”) in view of U.S. Patent No. 6,272,499 issued to Wooten (“*Wooten*”). The analysis of the present Office Action parallels that of previous actions: *Herzi* is alleged to teach or suggest most of the elements of independent claims 1, 8, 14 and 24, with the admitted caveat that *Herzi* lacks the periodic interrupt each independent claim requires. The secondary reference, *Wooten*, is relied upon for its alleged teaching of a periodic interrupt, and the pair of references is said to render Applicants’ claims unpatentable.

Unfortunately, even assuming for the sake of argument that the references may be combined, this analysis confuses the two sorts of interrupts Applicants discussed in their Response to a prior Office Action. As the Examiner may recall, Universal Serial Bus (“USB”) systems deal with four different classes of data, which are identified by the names Isochronous, Control, Bulk, and Interrupt. However, USB Interrupt data transfers do not necessarily involve hardware interrupt activity. Instead, a USB Interrupt transfer is a polling arrangement: the USB host controller is configured to send a token periodically to a USB device, and the device returns data if it has any, or a negative-acknowledge (“NAK”) packet if it has none.

Wooten describes a data structure that is useful for managing USB Interrupt transfer descriptors: by constructing the reverse binary tree shown in Figure 5, the USB host controller can easily be configured to send tokens to a USB device (that is, to *poll* the device) on a desired schedule (every 32ms, 16ms, 8ms, 4ms, 2ms or 1ms). *Wooten*'s wording in the sections specifically identified by the Examiner, as well as the reference generally, is clear in this regard. For example, at *Wooten* c. 12, ll. 37-45, interrupt *lists* are processed periodically. In other words, a USB device that requested a guaranteed frequency of service will be polled at that frequency.

Furthermore, even assuming (again, for the sake of argument) that the periodic polling could be described as a periodic interrupt, in *Wooten*, it is the USB host controller performing that activity. The USB host controller has already been identified with the “external bus controller” element of the claim, so the Examiner’s analysis gives no weight to the different claim phrases “external bus controller” and “external bus support component.” To simplify and highlight this error, consider the claim to require “an *A* and a *B*, the *B* to cause a periodic interrupt,” while the Examiner’s analysis (arguably) establishes “an *A* and an *A*, the *A* to cause a periodic interrupt.”

For at least the foregoing reasons, Applicants respectfully submit that claim 1 is patentable over the references of record, and request that the Examiner withdraw the current rejection.

Claims 2-4 and 6-7 stand rejected over the same references as claim 1, but depend from that claim and are patentable for at least the reasons discussed above. Claim 5 also depends from claim 1, and is rejected over *Herzi* and *Wooten*, and further in view of an Intel publication, “Instantly Available Power Managed Desktop PC Design Guide” (“*Design Guide*”). However, *Design Guide* is not relied upon for any teachings regarding periodic interrupts, and Applicants have not located any such material in their review. Therefore, all of claims 2-7

are believed to be patentable over the references of record; the Examiner is respectfully requested to withdraw these rejections.

The remaining independent claims, 8, 14 and 24, contain limitations similar to those discussed in reference to claim 1: periodic interrupts generated by an external bus support component, where the external bus support component is different from an external bus controller. Therefore, the arguments presented above in reference to claim 1 also apply to claims 8, 14 and 24. Since the references of record fail to teach or suggest the external bus controller and an external bus support component that generates periodic interrupts, these claims are believed to be patentable. The Examiner is requested to withdraw these rejections.

Claims 9, 12, 15, 19, 25 and 28 depend directly or indirectly from one of claims 8, 14 or 24, and are patentable for at least the reasons mentioned in support of those base claims. Applicants respectfully request that the Examiner withdraw these rejections.

Claims 13, 18 and 29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over *Herzi* and *Wooten*, as discussed in relation to their respective base claims 8, 14 and 24, and further in view of *Design Guide*, as discussed in regard to claim 5. As previously noted, neither *Herzi* and *Wooten* nor *Design Guide* teach or suggest the material Applicants have called out in the preceding arguments. Therefore, the Examiner should withdraw the rejections of these dependent claims.

Claims 11, 17 and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over *Herzi* and *Wooten*, as discussed in relation to their respective base claims 8, 14 and 24, and further in view of U.S. Patent No. 6,128,732 issued to Chaiken (“*Chaiken*”). The deficiencies of *Herzi* and *Wooten* have been considered already, while *Chaiken* was examined in a previous Response and noted to lack periodic interrupts generated by an external bus support component (instead, *Chaiken*’s interrupts are generated by a USB device).

Applicants respectfully submit that claims 11, 17 and 27 are patentable over the references of record, and ask the Examiner to withdraw the current rejections.

Claim 20 stands rejected under 35 U.S.C. § 103(a) as unpatentable over *Herzi* and *Wooten, supra*, and further in view of U.S. Patent No. 6,772,252 to Eichler, Jr. *et al.* (“*Eichler*”). Claim 20 depends from claim 14, and is believed to be patentable for at least the reasons discussed in support of that base claim, even assuming that *Eichler* teaches what the Examiner suggests, and that the three references properly may be combined. Applicants respectfully request that the rejection of claim 20 be withdrawn.

Claim 23 stands rejected under 35 U.S.C. § 103(a) as unpatentable over *Herzi* and *Wooten, supra*, and further in view of U.S. Patent No. 6,467,008 to Gentry, Jr. *et al.* (“*Gentry*”). Claim 23 also depends from claim 14, and is believed to be patentable for at least the reasons discussed in support of that base claim, even assuming that *Gentry* teaches what the Examiner suggests, and that the three references properly may be combined. Applicants respectfully request that the rejection of claim 23 be withdrawn.

II. Allowable Material

Applicants note with appreciation that the Examiner has determined claims 10, 16, 21 and 26 to contain allowable material.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1-21 and 23-29, patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP

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Thomas Coester

Thomas M. Coester, Reg. No. 39,637

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
(310) 207-3800

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Marilyn Bass

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